



# PATENT SPECIFICATION

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## COMPLETE SPECIFICATION.

### An Improved Lock Nut.

I, WILLIAM YOUTEN, of 25, Brunswick Square, Hove, in the County of Sussex, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to lock nuts, and refers to a nut formed as a simple unit and adapted to be screwed into position either end first or removed in the usual manner by an ordinary spanner.

According to the general principle of the invention I provide in the interior of the nut, and in near proximity to each end thereof, an annular groove, so as to leave in the interior of the nut, three screw threaded portions, and I further provide means, so that when the nut is screwed home the screw threaded portion at this end in contact with the work piece and the screw threaded intermediate portion are forced nearer together, by reason of the resiliency of the metal in the neighbourhood of the groove between them, thus exerting a gripping action upon the thread of the bolt, by reason of the pitch of the threads in the two portions in question being forced out of truth in relation to one another.

The means for forcing the end portions of the nut towards the intermediate portion and for throwing the pitch out of truth may consist in bevelling the end surfaces of the nut either of which is adapted to come into contact with the work piece according to which end is first passed over the bolt. The part of this contacting surface nearest to the bolt comes first into contact, after which by the continued screwing home of the nut, the intermediate portion approaches the lower portion, owing to the resiliency of the metal in the neighbourhood of the particular groove. This distortion causes the lower portion to grip the thread of

the bolt, and the reaction produced causes the intermediate and other end portion to come also into much tighter frictional contact with the threads of the bolt corresponding thereto, the net result being that the whole device acts as an effective lock nut.

It has previously been proposed to form a lock nut by providing in the interior of the nut in near proximity to one end thereof, an annular groove so as to leave in the interior of the nut two screw threaded portions and to form the contacting surface of the said end of the nut, conical or convex, but such a nut, unless screwed on to a bolt so that the single conical or convex end makes contact with the workpiece does not act as a lock nut. With the present invention either end of the nut secures locking.

And in order that the said invention may be clearly understood, it will now be described with reference to the accompanying drawing, which shows a sectional elevation of a bolt with a nut made according to the invention applied thereto.

In the drawing 6 is the bolt, having screwed thereon a nut 7. This nut has female screw threaded portions 8 and 9, which form portions of an ordinary thread, 8 being an intermediate portion and 9 two end portions. 10 are grooves between the intermediate portion 8 and the portions 9. The contacting end surfaces 11 of the nut are bevelled off as shown.

In some cases the general construction is precisely similar to that described with reference to the portions 8 and 9 and the grooves 10, but in place of bevelling off the contacting surfaces of the nut, these surfaces are left square and are adapted to coact with the bevelled surface of a washer interposed between the work piece and the nut.

The nut made according to the inven-

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tion possesses the advantage that the locking action is effective whichever end of the nut is first screwed on to the bolt.

Although the groove 10 has been shown  
5 as rectangular or channel shaped in cross section, it will be understood that it may be curved, V shaped or of other appropriate form in cross section.

Having now particularly described and  
10 ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A nut provided in the interior and  
15 in near proximity to each end thereof with an annular groove, dividing the female thread into three portions, for the purposes set forth.

2. A nut provided in the interior and in near proximity to each end thereof 20 with an annular groove dividing the female thread into three portions, and means, such as bevelling the ends or a bevelled washer coacting with flat ends, for forcing either end portion towards the 25 intermediate portion when the nut is screwed home.

3. Nuts manufactured and operating substantially as herein described and shown on the accompanying drawing, for 30 the purposes set forth.

Dated this 30th day of August, 1923.

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[This Drawing is a full-size reproduction of the Original.]

